


**ADDENDUM #1  
MAY 15, 2009  
2009 LAKESIDE INTERCEPTOR SANITARY SEWER OVERFLOW  
FACILITY BASIN NO. 2  
CITY OF DULUTH  
PROJECT 0696SN  
BID NUMBER 09-0289  
BID OPENING: MAY 21, 2009 @ 2:00 PM LOCAL TIME**

**SUBMITTAL CERTIFICATION**

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Howard Smith, P.E.

Signature: 

Date: 5/15/2009 License #: 46875

**NOTICE**

This Addendum is issued to modify, explain or correct the original drawings, specifications and/or previous addendums and is hereby made a part of the Contract Documents. Please attach this Addendum to the specifications in your possession and note receipt of this Addendum on page 00 41 00-2 of the bid. The bid date remains unchanged.

**PROJECT MANUAL**

**SPECIAL PROVISIONS**

**ADD** the following Special Provision paragraph SP-7.1:

Permitted daily working hours shall be between 7am to 7pm. The Contractor must receive approval from the Engineer if work will occur during restricted hours.

**ADD** the following Special Provision paragraph SP-10.18:

Shoring material must be removed as much as possible before backfilling of the excavation. Shoring materials anchored or grouted into bedrock shall be cut at the bedrock and removed.

**REPLACE** Special Provision paragraph SP-13.3 with the following paragraph:

All rock blasting must be completed prior to pouring concrete on site, but not allowed prior to removal of contaminated fill material.

**REPLACE** Special Provision paragraph SP-18 with the following paragraph:

**SP-18 (2505) GAS SERVICE AND MAIN**

The Contractor is responsible to coordinate with City of Duluth Public Works and Utilities for installation of new 1" gas service and 2" gas main to the generator. The City will provide labor, material, and equipment for installation of gas service and main up to the meter stop. The Contractor is responsible for the meter application and all plumbing of the gas service into the generator beyond the meter stop. The City Utility will provide the Contractor with the service regulator, meter and meter bar or meter mounting bracket, test plugs, or relief devices, as may be required. All other materials for the meter set shall be furnished by the Contractor. The Contractor is responsible for all necessary coordination, scheduling, and incidental items associated with the gas line.

**REPLACE** Special Provision paragraph SP-22 with the following paragraph:

**SP-22 SYSTEM INTEGRATOR COORDINATION**

The Contractors Systems Integrator for this project shall be Instrument Control Systems. Instrument Control Systems shall maintain the existing and coordinate the new sharing of data and control signals between the Lakeside SSO Storage Facility Basin 1, the Lakeside Interceptor Diversion Structure, and WLSSD's Endion Pump Station. Incorporation of the new SCADA from the Lakeside SSO Storage Facility Basin 2 must be coordinated with a third party systems integrator to be determined as described by one of the following alternatives:

- 1) If the City of Duluth 2009 Comprehensive Supervisory Control and Data Acquisition System

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project, currently advertised for bid is awarded during this contract, Instrument Control Systems must coordinate implementation of the SCADA from this project to the City's master SCADA system with the awarded Systems Integrator from the referenced contract.

- 2) If the City of Duluth 2009 Comprehensive Supervisory Control and Data Acquisition System project, currently advertised for bid is NOT awarded during this contract, Instrument Control Systems must coordinate with Siemens to incorporate SCADA from this project into the City's existing SCADA system. If necessary services of Siemens to incorporate the Lakeside SSO Storage Facility Basin 2 project will be paid for as the Systems Integrator Allowance bid item.

**ADD** the following Special Provision:

**SP-32 APPENDICES**

Appendices A through E listed in section 01 01 10-3 are not included in the specifications. These appendices are available for review at the City of Duluth Engineering Office, Room 211, 411 West 1<sup>st</sup> Street, Duluth, MN 55802.

**ADD** the following Special Provision:

**SP-33 ARRA BUY AMERICAN REQUIREMENTS**

The Contractor acknowledges to and for the benefit of the City of Duluth ("Purchaser") and the Minnesota Public Facilities Authority ("Authority") that it understands the project, goods and services under this Agreement (collectively, the "Project") are being funded, in whole or in part, with monies made available by the federal American Recovery and Reinvestment Act of 2009 ("ARRA") and ARRA contains provisions commonly known as "Buy American" which require that all of the iron, steel, and manufactured goods used in the Project be produced in the United States ("Buy American Requirements") including all iron, steel, and manufactured goods provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the Authority that (a) the Contractor has reviewed and understands the Buy American Requirements, and (b) all of the iron, steel, and manufactured goods used in the Project will be and/or have been produced in the United States in a manner that complies with the Buy American Requirements, unless a waiver of the requirements is approved by the federal Environmental Protection Agency. The Contractor agrees to provide to the Purchaser and the Authority any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the Buy American Requirements, as may be requested from time to time by the Purchaser or the Authority. Notwithstanding any other provision of this Agreement, any failure of the Contractor to comply with this paragraph shall permit the Purchaser or the Authority to recover as damages against the Contractor any loss, expense or cost (including without limitation reasonable attorneys' fees) incurred by the Purchaser or the Authority resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the Authority or any damages owed to the Authority by the Purchaser). While the

Contractor has no direct contractual privity with the Authority, the Purchaser and the Contractor agree that the Authority, as a lender to the Purchaser for the funding of the Project, is a third party beneficiary of the provisions contained in this paragraph and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph effect) may be amended or waived without the prior written consent of the Authority.

**ADD** the following Special Provision:

**SP-34 WATER RETAINING CONCRETE TANK CONSTRUCTION EXPERIENCE**

The general contractor must have at least five years of experience in water retaining concrete tank construction. Within this five-year period, the contractor must have constructed a minimum of 5 water-retaining structures from cast in place concrete. Pre-cast concrete installations shall not count towards the 5 minimum projects. Each of these installations must be in satisfactory operation. Project name and contact information must be provided for the installations upon request.

**TECHNICAL SPECIFICATIONS**

**DIVISION 5 – METALS**

**ADD** attached the specification section 05 50 00 – METAL FABRICATIONS.

**REMOVE** and disregard specification section 05 52 00 – HANDRAILS AND RAILINGS.

**DIVISION 7 – THERMAL AND MOISTURE PROTECTION**

In specification section 07 10 00 3.02.A.2.h, **REMOVE** "...vertical concrete surfaces, the geomembrane..." and **ADD** "any vertical surface such as hatch curbs, column supports, raised slabs and vent pipes. The geomembrane..."

In specification section 07 10 00 3.02.A.2.h, after "...around all side of the concrete surface." **ADD** "The edges of the membrane shall be affixed to the concrete surfaces with a Hilti X-CR 24S12 stainless steel powder actuated nail at three foot on-center, including vertical surfaces. The edges of the membrane shall be affixed to vent pipes with black extra heavy duty nylon cable ties."

**DIVISION 26 – ELECTRICAL**

All Section(s) **CHANGE** all references to "LCP-LSD" to "LCP-LDS".

**DIVISION 32 – EXTERIOR IMPROVEMENTS**

**REPLACE** paragraph 2.01 section 32 14 43-6 with the following paragraph:

"Porous pavers shall be Uni Eco-Stone manufactured by Borgert Products, Inc., Aqua-loc or Brickstone manufactured by Willow Creek Products, Inc., H2O Pro Pavers manufactured by County Materials, or approved equal."

**ADD** attached the specification section 32 90 00 - LANDSCAPE AND PLANTINGS.

DIVISION 40 - PROCESS INTEGRATION

**ADD** the following paragraph 2.08 - J to section 40 23 23-6

"J. Flap gates shall be provided with a stainless steel chain for the purpose of lifting the gate. The chain shall be of sufficient length to be accessible from the nearest overhead access hatch."

**PLANS**

Sheet No. G-3 **ADD** plan note:

7. "Contractor shall provide the following painted pavement markings; a centerline on the newly constructed Lakewalk to match existing, and parking lot stalls and hatching as shown on plans. All pavement markings shall be in accordance with MnDOT 3590."

Sheet No. G-4 and S-11 **CLARIFICATION:** Elevations shown on sheet G-4 to describe the top of wall of the cast-in-place retaining wall and the site grading contours shall supersede similar information on sheet S-11

On plan sheet number S-10, **REMOVE** "SEALED..." from KEY NOTE 1.

On plan sheet number S-10, after "...GRID G." **ADD** "AFFIX EDGES OF MEMBRANE TO CONCRETE WITH HILTI X-CR 24S12 STAINLESS STEEL NAILS AT 3'-0" OC AND TO VENT PIPE WITH HEAVY DUTY NYLON CABLE TIES."

Sheet No. S-12 **REPLACE** Key Note 10 with the following:

"Provide fall protection per detail E/S-4 and section 1/S-3 at noted locations."

All Sheet(s) **CHANGE** all references to "LCP-LSD" to "LCP-LDS"

All Sheet(s) **CHANGE** all references to "LCP-LOF" to "LCP-LDS"

All Sheet(s) **CHANGE** all references to "LOF-ECB" to "LDS-ECB"

Sheet No. E-3 **REPLACE** Plan Note 1 with the following:

"Approximate location of new utility transformer. The contractor shall coordinate actual location and installation with utility and field engineer. Direct utility costs per the utility

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allowance. All other materials and tasks shall be inclusive to this contract. The contractor shall furnish new concrete pad, conduits, and conductors per utility requirements (coordinate with schedule and One-Line).

Sheet No.E-3 **REPLACE** Plan Note 12 with the following:  
"LCP-LDS"

Sheet No.E-3 **REPLACE** Plan Note 19 with the following:  
"WP/GFI receptacle mounted 36-inches minimum AFG. Furnish and Install SS Mounting Pedestal. Conduit shall be GRS exposed above grade.

Sheet No.E-5 **REPLACE** Electrical Requirements: Note 12 with the following:  
"Utility Service Lateral: Furnish and install conductors as scheduled per utility requirements. In addition, furnish and install (1) 4" spare conduit. The contractor shall coordinate the installation with field engineer and MN Power (complete and inclusive). Direct cost from the Utility shall be by utility allowance.

Sheet No.E-5 **REPLACE** Electrical Requirements: Note 24 with the following:  
"Ejector Pump: Furnish and install new circuit to Valve Vault Receptacle. Branch circuit shall be feed from LSF-PP-1. Furnish dedicated 20/1 GFI Circuit breaker in LSF-PP-1. Receptacle shall be WP."

Sheet No.E-11 **ADD** a 100/2 Circuit Breaker in Spaces 21, 23. Feed LSD-ECB.

Sheet No.E-11 **CHANGE** the Label of spaces 1, 3, & 5 to Future LSF-PP-2.

Sheet No.E-11 **CHANGE** Branch circuit breaker 4 shall be a 20/1 GFI style.

END OF ADDENDUM

SECTION 05 50 00

METAL FABRICATIONS

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

- A. Applicable provisions of Division 01 shall govern the work of this section.

1.02 APPLICABLE PUBLICATIONS

- A. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto.

1. The Aluminum Association (AA), Specifications and Standards:
  - a. AA Sections 6 and 7 - Aluminum Construction Manual, Specifications for Aluminum Structures, Current Edition.
2. American Institute of Steel Construction (AISC), Specifications and Standards:
  - a. AISC Section 1.23 - Specification for the Design, Fabrication and Erection of Structural Steel for Buildings (Riveted, Bolted and Arc-Welded Construction), Current Editions.
3. American Society for Testing and Materials (ASTM), Annual Book of ASTM Standards, Current Edition.
  - a. ASTM A36 - Specification for Structural Steel, Current Edition.
  - b. ASTM A123 - Specification for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products, Current Edition.
  - c. ASTM A153 - Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware, Current Edition.
  - d. ASTM A283 - Specification for Low and Intermediate Tensile Strength Carbon Steel Plates, Current Edition.
  - e. ASTM A325 - Specifications for Structural Bolts, Steel, Heat-Treated, 120/105 ksi Minimum Tensile Strength, Current Edition.
  - f. ASTM A385 - Practice for Providing High-Quality Zinc Coatings (Hot-Dip), Current Edition.
  - g. ASTM A633 - Specification for Normalized High-Strength Low-Alloy Structural Steel, Current Edition.
  - h. ASTM B209 - Specification for Aluminum and Aluminum-Alloy Sheet and Plate, Current Edition.
  - i. ASTM B210 - Specification for Aluminum-Alloy Drawn Seamless Tubes, Current Edition.
  - j. ASTM B211 - Specification for Aluminum and Aluminum-Alloy Bars, Rods, and Wire, Current Edition.
  - k. ASTM B221 - Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes, Current Edition.

1. ASTM B308 - Specification for Aluminum-Alloy 6061-T6 Standard Structural Shapes, Current Edition.
- m. ASTM B429 - Specification for Aluminum-Alloy Extruded Structural Pipe and Tube, Current Edition.
- n. ASTM B633 - Specification for Electrodeposited Coatings of Zinc on Iron and Steel, Current Edition.
- o. ASTM B766 - Specification for Electrodeposited Coatings of Cadmium, Current Edition.
4. American Welding Society (AWS) Specifications and Standards, Current Edition.
  - a. AWS A5.1 - Specification for Mild Steel Covered Arc-Welding Electrodes, Current Edition.
  - b. AWS A5.10 - Specification for Aluminum and Aluminum-Alloy Welding Rods and Bare Electrodes, Current Edition.

#### 1.03 DESCRIPTION OF WORK

- A. The work under this section shall cover furnishing and installing the fabricated metal as described in this section and as shown on the contract drawings.

#### 1.04 RELATED WORK ELSEWHERE

- A. Procurement and Contracting Requirements - Division 00 (All Sections)
- B. Submittals - Division 01
- C. Handrails and Railings - Division 05

#### 1.05 SUBMITTALS

- A. The Contractor shall submit such submittals and/or catalog cuts required for the construction and installation of the materials. These drawings shall be accurate in every detail and shall contain all information necessary to relate the materials to the specifications.
- B. Submittals shall indicate the intended materials arrangement, major support requirements, plot area and all intricate or detailed construction requirements. Information shall be in conformance with requirements of Submittals - Division 01 of these specifications.

#### 1.06 OPERATION/MAINTENANCE MANUALS AND INSTRUCTIONS (NONE)



## PART 2 PRODUCTS AND MATERIALS

### 2.01 METAL SURFACES, GENERAL

- A. For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

### 2.02 STEEL

- A. Steel for structural components and assemblies shall meet the requirements of the applicable ASTM Standards as follows:

Product and Material	Standard
Carbon Steel Plates of Structural Quality	ASTM A283, Grade C
Structural Steel	ASTM A36

### 2.03 GALVANIZING

- A. Zinc coatings on products fabricated from rolled, pressed, and forged steel shapes, plates, bars and strip, 1/8 inch thick and heavier shall conform to ASTM A123.

- B. Zinc coatings on assembled steel products shall meet the requirements of ASTM A123 and shall be applied in conformance with ASTM A385 for the recommended practice for providing high quality zinc coatings on assembled products, unless otherwise specified.

- C. Zinc coatings on iron and steel hardware shall meet the requirements of ASTM A153 except that bolts, screws and other fasteners, 1/2 inch or less in diameter, may be coated with electro-deposited zinc or cadmium coating meeting the requirements of ASTM B633, Type RS, or ASTM B766, Type TS unless otherwise specified.

### 2.04 ALUMINUM ALLOY

- A. Aluminum alloy products, unless otherwise specified, shall be Alloy 6061-T6. Aluminum alloy products shall meet the requirements of the applicable ASTM Standard as follows.

Product and Material	Standard
Sheet and plate	ASTM B209
Drawn seamless tubes	ASTM B210
Rolled or cold-finished bars, rods and wire	ASTM B211
Extruded bars, rods, wire, shapes and tubes	ASTM B221
Standard structural shapes	ASTM B308
Extruded structural pipe and tube	ASTM B429

## 2.05 BOLTS

- A. High strength bolts, nuts and washers shall conform to ASTM A325. When galvanized or zinc-coated bolts are specified, the zinc coating shall meet the requirements of ASTM A153; except that bolts 1/2 inch or less in diameter may be coated with electro-deposited zinc or cadmium coating meeting the requirements of ASTM B633, Type RS, or ASTM B766, Type TS unless otherwise specified.

## 2.06 WELDING ELECTRODES

- A. Steel welding electrodes shall conform to the requirements of AWS A5.1, "Specification for Mild Steel Covered Arc-Welding Electrodes", except that they shall be uniformly and heavily coated (not washed) and shall be of such a nature that the coating will not chip or peel while being used with the maximum amperage specified by the manufacturer.
- B. Aluminum welding electrodes shall conform to the requirements of AWS A5.10, "Specification for Aluminum and Aluminum-Alloy Welding Rods and Bare Electrodes".

## PART 3 CONSTRUCTION METHODS

### 3.01 QUALITY ASSURANCE

- A. Take field measurements prior to preparation of submittals and fabrication, where possible without delay to job progress. Allow for trimming and fitting wherever taking field measurements before fabrication.
- B. Furnish inserts and anchoring devices which must be set in concrete or built into masonry for installation of miscellaneous metal work. Provide setting drawings, templates, instructions and directions for installation of anchorage devices. Coordinate delivery with other work to avoid delay. See Division 03 - Concrete and Division 04 - Masonry of these specifications for installation of inserts and anchorage devices.
- C. Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation.

### 3.02 FABRICATION

- A. Steel shall be structural quality unless otherwise specified. Castings shall be thoroughly cleaned and subjected to careful inspection before installation. Finished surfaces shall be smooth and true to assure proper fit.

1 B. Fabrication of structural steel shall meet the requirements of Section 1.23 of the  
2 "Specification for the Design, Fabrication and Erection of Structural Steel for  
3 Buildings (Riveted, Bolted and Arc-Welded Construction)", American Institute of  
4 Steel Construction.

5 C. Fabrication of structural aluminum shall meet the requirements of Sections 6 and  
6 7 of the Aluminum Construction Manual, "Specifications for Aluminum  
7 Structures", The Aluminum Association.

### 8 3.03 ERECTION

9 A. The frame of metal supports shall be carried up true and plumb. Temporary  
10 bracing shall be placed wherever necessary to resist all loads to which the  
11 structure may be subjected, including those applied by the installation and  
12 operation of equipment. Such bracing shall be left in place as long as may be  
13 necessary for safety.

14 B. As erection progresses the work shall be securely bolted up, or welded, to resist  
15 all dead load, wind and erection stresses. The Contractor shall furnish such fitting  
16 up bolts, nuts and washers as may be required.

17 C. All field welding shall be done in conformance to the requirements for shop  
18 fabrication, except those that expressly apply to shop conditions only. Galvanized  
19 items shall not be cut, welded or drilled after the zinc coating is applied.

### 20 3.04 PROTECTIVE COATINGS

21 A. Items specified to be galvanized shall be completely fabricated for field assembly  
22 before the application of the zinc coatings.

23 B. Items specified to be painted shall be shop primed with a rust inhibitive primer  
24 and field painted in accordance with the Special Provisions.

25 C. All aluminum items to be in contact with concrete shall have a bituminous  
26 coating.

27  
28 END OF SECTION

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. TOPSOIL – The Contractor will provide friable natural loam, free from rocks, stones, weeds, brush, clay lumps, root twigs, litter and environmental contaminants for all landscape operations.
- B. MULCH - Shredded bark shall consist of finely shredded hardbark mulch, free of sticks and leaves
- C. ORGANIC MATERIAL- Refer to Landscape Details
- D. FERTILIZER
  - 1. Fertilizer shall be commercial fertilizer, which shall be a complete fertilizer with the following approximate analysis:

Nitrogen	6%
Phosphorus	24%
Potash	24%
  - 2. One-quarter of the nitrogen shall be in the form of nitrates, one-quarter in the form of ammonia salts, and one-half in the form of organic nitrogen. Available phosphoric acid shall be derived from super-phosphate having a minimum guaranteed analysis of 20% available phosphate. The potash shall be in the form of sulfate or potash. The balance of the fertilizer shall be made up of materials usually present in such a product. It shall be free of dust, sticks, sand, and stone or other debris. All fertilizer shall be delivered in standard size, unopened original containers bearing the name of the manufacturer; name brand or trademark as well as the manufacturer's guaranteed analysis. It shall be protected on site at all times.
- E. HERBICIDE – PRE-EMERGENTS- Provide a mixture with active ingredients consisting of “a-a-a-trifluoro-2, 6-dinitro-n, n-dipropyl-p-toluidine” (1.75% of total mixture) and inactive ingredients (98.25% of total mixture). Manufacturer: preen or equal.
- F. WATER
  - 1. The Contractor shall provide sufficient water to maintain plant materials, seed granted. When water is provided by way of fire hydrants, it shall be the Contractor's responsibility to be in compliance with all local ordinances concerning water sources. If a meter is required, it is the Contractor's responsibility to obtain, store and return the meter.

## SECTION 32 90 00

### LANDSCAPE AND PLANTINGS

#### PART 1 GENERAL

##### 1.1 WORK INCLUDED

- A. Site landscaping as shown on the drawings and specified herein, including but not necessarily limited to the following:
1. Topsoil spreading
  2. Planting bed preparation
  3. Tree, shrub, perennial and groundcover installation

##### 1.2 RELATED WORK

- A. Specified Elsewhere:
1. Section 01010 - Summary of Work
  2. Section 02210 - Grading

##### 1.3 QUALITY ASSURANCE

- A. Landscaping shall be done during the season or seasons, which are normal for such work, as determined by weather conditions and by accepted practice. Planting may be done under unreasonable conditions without additional compensation, but such work must have the prior approval of the Landscape Architect or Owner's Representative in writing as to the time of work and methods of operations. Approval to plant under such conditions shall in no way relieve the Contractor from the guarantee provisions of these specifications.
- B. The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Landscape Architect or Owner's Representative access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of the like effect as if shown or mentioned in both. In case of differences between drawings and specifications, the specifications shall govern. In case of discrepancy either in the figures, in the drawings, or in the specifications, the Contractor shall notify the Landscape Architect or Owner's Representative, who shall promptly make a determination in writing. If the adjustment affects the contract amount, a Change Order shall be issued. Any adjustment made by the Contractor without a determination issued by the Landscape Architect or Owner's Representative shall be at the Contractor's own risk and expense.

## 2.2 PLANT MATERIAL

### A. GENERAL

1. The Landscape Architect or Owner's Representative reserves the right to inspect plants at the nursery but such inspection shall not preclude the right of rejection at the site. Contractor shall furnish and install all plants as shown on the drawing and in the quantities as actually designated on the drawings. The quantities shown on the plant list are included for convenience purposes only.

### B. NOMENCLATURE

1. The names of the plants indicated on the drawings conform generally to those accepted in the nursery trade.

### C. QUALITY AND SIZE

1. Plants shall have a habit of growth that is normal for the species and shall be sound, healthy, vigorous and free from insect infestation, plant diseases, or injuries. All shrubs shall have fully developed fibrous root systems typical of the stated species
2. All plants shall be nursery grown under climatic conditions similar to those which exist in the locality of the site for at least two (2) years and equal or exceed the measurements specified in the plant list. They shall be measured before pruning with branches in formal position. All necessary pruning shall be done only at the time of planting. Trees will not be accepted which have their leaders cut or which have their leaders damaged so that cutting is necessary. Plants larger in size than specified may be used with the approval of the Landscape Architect or Owner's representative but the use of larger plants will make no change in the contract price. Requirements for the measurements, branching, quality, balling, and burlapping of plants on the plant list shall follow the Code of Standards (60.1-1980) by the AMERICAN ASSOCIATION OF NURSERYMEN, INC.

### D. BALLED AND BURLAPPED PLANTS

1. Balled and burlapped plant (designated "B&B" on plant list) shall be dug with the firm natural balls of earth of diameter indicated herein below and of sufficient depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Plants having balls broken or cracked during delivery or at time of planting will cause the plant to be rejected by the Landscape Architect or Owner's Representative.

2. Minimum dimensions required:

<u>Trunk Caliper (Single stem trees)</u>	<u>Diameter of Ball</u>	<u>Depth of ball</u>
2 1/2"*	28"	18"
3"*	32"	21"

\* (measured 6" above ground level)

3. The diameter at the top of each ball shall be the diameter specified above and the diameter at the bottom of each ball shall not be less than 70% of the specified top diameter. The top and bottom surfaces shall be parallel. The ball shall be of the specified depth at all points perpendicular to the bottom of the ball. The Landscape Architect or Owner's Representative may reject any plant specified as "balled and burlapped" which in his opinion fails to conform to the balling requirements set forth in this section.

### PART 3 EXECUTION

#### 3.1 DELIVERIES

- A. The Contractor shall take all precautions that are demanded by good trade practice to insure arrival of the plant material at the stated delivery point is in good condition and without injury. Plants shall be covered at all times during transportation.

#### 3.2 TEMPORARY STORAGE

- A. Insofar as it is possible; plant material shall be planted on the day of delivery. In the event this is not possible, the Contractor shall protect the unplanted stock from sun and drying winds at all times. All balled and burlapped plants shall be shaded from the sun, have their ball set on the ground and heeled in with sawdust, peat, soil, or other moisture-holding material and shall be kept moist. Plants shall not remain on site unplanted for longer than three- (3) days.

#### 3.3 EXCAVATION FOR PLANTING

- A. Excavation for planting shall include the stripping and stockpiling of all acceptable topsoil encountered within the areas to be excavated for tree holes, plant pits and planting beds. Circular pits (see Details) shall be excavated for all plants except for ground cover or other bedding type plant material. In general, the diameter of pits for trees shall be at least two feet greater than the diameter of the ball, container, or spread of bare roots. The diameter of pits for shrubs shall be at least one foot greater

than the diameter of the ball, container, or the spread of bare roots.

- B. The depth of pits for trees shall be suitable to accommodate the ball, container, or bare roots when the plant is set to finished grade allowing for six inches of compacted, prepared soil in the bottom of the pit.
- C. For hedge plantings, a continuous trench instead of separate round pits may be utilized.
- D. Where unforeseen obstructions are below or above ground, an alternate location may be selected, with approval from the Landscape Architect or Owner's Representative. Where locations cannot be changed, removal of underground obstructions (i.e. rock) shall be the responsibility of the Contractor. The obstruction shall be removed to a depth of not less than 3 feet below grade and no less than 6 inches below the bottom of ball when plant is properly set at the required grade.
- E. Excavated topsoil or rich loam shall be stockpiled and re-used for backfilling of pits and all excavated material not suitable for backfilling shall be disposed of by the Contractor offsite.

### 3.4 SOIL PREPARATION

- A. Soil used for backfilling planting pits and trenches shall be suitable topsoil. It shall be mixed as follows: 60% topsoil, 35% peat, and 5% cattle manure, plus one pound (1lb.) of 6-24-24 fertilizer per cubic yard of mixture.

### 3.5 PREPARATION OF PLANTING

- A. See Planting Details for proper installation.

### 3.6 BALLED AND BURLAPPED PLANTS

- A. Balled and burlapped plants ("B&B") being planted in pits or trenches shall be placed in the center of the pit or trench on six inches of compacted, prepared soil. Adjusted plant so that the top of the root ball bears the same relationship to finish grade as it bore to its previous grade in the nursery.
- B. All twine tied around the tree trunk shall be removed. All treated burlap or plastic wrap shall be rolled down all around the ball. Untreated burlap need not be removed, but should be loosened around the tree trunk.
- C. Backfill the planting pits with prepared soil in 12" layers and tamp each layer to fill voids until the planting mixture is at final grade.



### 3.7 CONTAINER GROWN PLANTS

- A. Remove potted plants from containers. If the growing medium is comprised of seventy-five percent (75%) or more of peat, perlite, sand, or like material other than soil, pull visible roots away from the container medium so as to leave the roots partially exposed. Place plants in plant pit or trench and carefully backfill with prepared soil among the exposed roots. Continue backfilling and tamping in six-inch (6") layers until the planting mixture is at final grade.

### 3.8 PRUNING

- A. Upon completion of the planting operations, all new tree and shrubs on the site shall be pruned. Pruning shall be limited to the minimum necessary to remove dead or injured twigs and branches or to compensate for the loss of roots due to transplanting. Pruning shall be performed to retain the natural habit or shape of the plant. Flowering trees shall be pruned only to remove dead or broken branches. In no case shall a leader be removed. Do not sheer any plant material.

### 3.9 HERBICIDE APPLICATION

- A. Immediately prior to mulching, an approved herbicide shall be applied according to the manufacturer's specifications. The herbicide shall come into direct contact with the soil. It shall never be applied on top of the mulch material. Care shall be taken to avoid applying the herbicide to the plant's leaf surfaces. It is recommended that the plant leaf surfaces be dry during herbicide applications. In situations where the herbicide becomes adhered to plant leaf surfaces immediately wash with water.

### 3.10 MULCHING

- A. Plants shall be mulched within 5 days after planting. A three-inch (3") layer of approved mulch material shall be used to cover a concentric area equivalent to the size of tree pit. Planting beds shall be mulched in their entirety. Mulching of ground cover shall be a maximum of 1"

### 3.11 WATERING

- A. All plants shall receive a through watering immediately after installation. During the summer planting season or other times of extreme heat, all evergreen and deciduous trees shall receive a minimum of 10 gallons of water per tree per watering. The Contractor shall continue to be responsible for watering during the period of temporary maintenance described below a min of six weeks after final inspection as needed. Owner's Representative should be notified upon watering.

### 3.12 MAINTENANCE

#### A. TEMPORARY

1. The Contractor shall be responsible for the total maintenance of all plant material until all landscape operations have received Final Acceptance. This includes not only plant material but also installation completion all seeded and/or sodded areas covered by the Contract. Temporary maintenance shall begin immediately after each plant is installed and shall include watering, and all necessary cultivation, weeding, pruning, disease and insect pest control, resetting of plants to proper grades or upright positions, restoration of damaged planting saucers, and any other procedure consistent with good horticultural practice necessary to insure normal, vigorous, and healthy growth of all work under Contract.

#### B. CONTINUED MAINTENANCE

1. For the duration of the guarantee period the Contractor shall be responsible for the resetting of settled plants, the straightening of plants which are not plumb. All other maintenance is the responsibility of the Owner. It is the Contractor's responsibility to occasionally inspect the quality of the Owner's maintenance during the guarantee period.

### 3.13 ACCEPTANCE

#### A. Final Acceptance

1. In order to obtain Final Acceptance, the Contractor shall notify the Landscape Architect or Owner's Representative by phone or in writing at the conclusion of all planting operations. The Landscape Architect or Owner's Representative shall determine Final Acceptability by way of a field inspection. It must conform to the following:
  - a. All plant material shall be in conformance with the landscape plan with respect to quantity, size, species and location, except those items accepted or revised in the field by the Landscape Architect.
  - b. All plant material shall be in healthy condition, as defined under the guarantee requirements.
  - c. All items shall be in general conformance with the specifications.
  - d. If the above conditions have been met, the Contractor becomes eligible for a ninety percent (90%) payment for this portion of the Contract. If the Landscape Architect or Owner's Representative rejects the inspected area an amount of equal to the rejected portion will be withheld from the ninety percent (90%) payment until such a that portion is acceptable. All findings will be documented in a field report, which will be forwarded to both Owner and General Contractor.
  - e. The granting of Final Acceptance shall constitute the beginning of the

are as follows:

b. SPRING REPLACEMENT SEASON

All plants-when ground becomes workable to June 15.

c. FALL REPLACEMENT SCHEDULE

Deciduous Plants-Sept. 1 to Nov. 15.

Evergreen Plants-Sept. 1 to Nov. 1.

d. PROCEDURE

All plants requiring replacement shall be removed and disposed of off site. All replacements shall be of the same size and species as the original plant unless otherwise approved in writing by the Landscape Architect or Owner's Representative. The replacements shall be supplied and installed in strict compliance with the original specifications. The Contractor shall notify the Landscape Architect at the conclusion of the replacement program. The Landscape Architect or Owner's Representative will then conduct an inspection of the replacements for the purpose of declaring the completion of the guarantee period.

4. EXCLUSIONS

The Contractor shall not be liable for the replacement cost of plants, which were damaged by deicing compounds, fertilizers, pesticides or other materials not specified by the Contract documents or not applied by him under his supervision, by relocating or removal by others, by acts of God, or vandalism.

END OF SECTION

guarantee period. Prior to the expiration of the one-year guarantee, the Contractor will make a follow-up inspection. The inspector will document his/her findings in a field report, copies of which will be transmitted to both the Owner and the Contractor.

### 3.15 GUARANTEE

A. The Contractor shall guarantee for a period of one (1) year the replacement of any plant which has died, or is in a dying condition, or which has failed to flourish in such a manner that its usefulness or appearance has been impaired. Any tree with a dead main leader or with a crown that is twenty-five (25%) or more dead shall be replaced. The Contractor is responsible to notify in writing the Owner's Representative 2 weeks prior to the expiration date of 1-year period from the Final Acceptance. Failure to do so will hold the Contractor responsible for the warranty until the one year guarantee has been signed off by both Contractor and Owner's Representative.

B. All replacement plants shall be guaranteed for an additional one- (1) year period. Based on the following:

1. ONE YEAR PERIODS

The one- (1) year guarantee for replacement plants shall begin on the date of Final Acceptance of all plant material by the Landscape Architect as documented in his/her field report. If acceptable by Owner or Owners Representative, designated phases may be granted for large-scale projects.

2. GUARANTEE PERIOD

During the guarantee period, the Contractor shall, from time to time, inspect the watering, cultivation, and other maintenance operations carried on by the Owner with respect to such work, and promptly report to the Owner any methods, practices, or operations which he considers unsatisfactory, and not in accord with his interests or good horticultural practices. The failure of the Contractor to inspect, or report, shall be construed as an acceptance by him of the Owner's maintenance operations, and he shall not thereafter claim or assert that any defects which may later develop are the result of such methods, practices or operations.

3. REPLACEMENTS

The decisions of the Landscape Architect and Owner's Representative for required replacements shall be conclusive and binding upon the Contractor. The Contractor shall also be responsible for repairing damage to persons and property also caused by defective workmanship and materials.

a. Plants, which have died prior to the final inspection, shall be replaced before final acceptance will be given. Plants, which die or require replacement for other reasons during the one (1) year guarantee period, shall be replaced during the acceptable planting season, which